The present listing of claims replaces all prior listings of claims.

Listing of Claims

1. (Previously Presented) An apparatus comprising:

a first logical interface configured to receive a file from a content provider;

a second logical interface configured to forward said file to one or more hosts as a sequence of data packets in a first file delivery transmission; and

a processor configured to perform the following:

a) receive a first request for the file from a first host;

b) define a multicast delivery group including the first host;

c) receive a second request for the file from a second host during the first file delivery transmission of the requested file to the first host;

d) determine whether the second host is situated within a locational area of the first host;

e) if the second host is situated within the locational area of the first host, add the second host to the multicast delivery group, and cause the transmission of a remaining portion of the first file delivery transmission to both first and second hosts after adding the second host to the multicast delivery group; and

f) when a host is added to the group during the first file delivery transmission then, following completion of the sequence of data packets, cause re-transmission of said file to the group as a sequence of data packets in a second file delivery transmission,

wherein each host in the group is allocated an amount of bandwidth on a network on which the first file delivery transmission occurs, and the processor is further configured to:

share allocated bandwidth of multiple hosts in the group to increase a data transfer rate experienced by the hosts in the group.

2. (Previously Presented) An apparatus according to claim 1, further configured to transmit the file via a first communication network and to receive the requests from the hosts via a second communication network.

3. (Previously Presented) An apparatus according to claim 1, wherein the apparatus is further configured to transmit one or both of a request and the file between the apparatus and the second host via a cellular communications network, and the locational area is defined in terms of a cell, and the group is limited to hosts situated in a locational area covered by a single cell.

4. (Previously presented) An apparatus according to claim 1, further configured to forward the file to the second host over a wireless communication network, being the last network element situated before an air-interface in a file delivery path between the content provider and the second host.

5. (Previously Presented) An apparatus according to claim 1, further comprising a file request handler configured to encrypt information in headers of the data packets relating to a correct order of data packets in the first file delivery transmission.

6. (Previously Presented) An apparatus according to claim 1, wherein said processor is further configured to log a point in the first file delivery transmission at which the second host is added to the group.

7. (Cancelled)

8. (Previously presented) An apparatus according to claim 1, configured to receive a negative acknowledgement message and to treat said message as a request for the file.

9. (Previously Presented) A method comprising:

receiving a request for a file from a first host;

retrieving the file from a content provider;

defining a group comprising the first host;

forwarding the file to the group as a sequence of data packets in a first file delivery transmission;

receiving a request from a further host to join said group during said first file delivery transmission;

responding to said request by transmitting to said further host a start packet to configure a connection between a network element and said further host;

adding to the group any further hosts submitting requests for the file during said first file delivery transmission whereby said further hosts receive the remaining data packets in said first file delivery transmission, wherein adding a further host to the group includes comparing a location of the further host with a location of the first host, and wherein the file is forwarded via a first communication network and the request from the first host is received via a second communication network; and

where a host is added to the group during the first file delivery transmission then, following completion of the sequence of data packets, re-transmitting said file to the group as a sequence of data packets in a second file delivery transmission,

wherein each host in the group is allocated an amount of bandwidth on a network on which the first file delivery transmission occurs, and the method further comprises sharing allocated bandwidth of multiple hosts in the group to increase a data transfer rate experienced by the hosts in the group.

10. (Canceled)

11. (Previously Presented) A method according to claim 9, wherein one or both of the request and the file is transmitted between the network element and the first host via a cellular communications network and the locational area is defined in terms of a cell, and the group is limited to hosts situated in an area covered by a single cell.

12. (Previously Presented) A method according to claim 9, further comprising encrypting information in headers of the data packets relating to a correct order of data packets in the first file delivery transmission.

13. (Previously Presented) A method according to claim 9, further comprising, where a further host has submitted a request during the first file delivery transmission, logging the point in the first file delivery transmission at which said further host joins the group.

14-15. (Cancelled)

16. (Previously Presented) A computer readable medium storing instructions that, when executed, cause a network element to perform the method of claim 9.

17. (Previously Presented) A method comprising:

a host sending to a network element via a cellular telecommunication network a request to join a group;

receiving, via a different communication network from said cellular telecommunication network, a start packet transmitted by the network element which configures a connection between the network element and the host;

receiving a sequence of data packets transmitted by the network element in a first file delivery transmission;

arranging the sequence of data packets in their appropriate order; and

receiving a second file delivery transmission comprising the sequence of data packets;

wherein the host retrieves data packets that were dropped or missed in the first file delivery transmission by retrieving the corresponding data packets in the second file delivery transmission; and

a data transfer rate experienced by the host increases as further hosts are included in the group through sharing of bandwidth allocated to the host and the further hosts on a network on which the first file delivery transmission occurs.

18. (Cancelled)

19. (Previously presented) The method of claim 9, further comprising:

after all hosts in the group have successfully received the file, maintaining the group active for a predetermined amount of time; and

terminating the group after the predetermined amount of time if no additional host issues a request for the file.

20. (Previously presented) The apparatus of claim 1, wherein said processor is further configured to:

after all hosts in the group have successfully received the file, maintain the group active for a predetermined amount of time; and

terminate the group after the predetermined amount of time if no additional host issues a request for the file.

21-22. (Cancelled)

23. (Previously Presented) An apparatus comprising:

a transmitter configured to send a request to a network element to join a group of one or more hosts to receive a file transmitted by said network element;

a receiver configured to receive a start packet transmitted by the network element to configure a connection between the network element and the receiver and to receive a sequence of data packets transmitted by the network element to the group in a first file delivery transmission and re-transmitted by the network element to the group in a second file delivery transmission; and

a processor configured to arrange the sequence of data packets in their appropriate order;

wherein the apparatus is arranged to retrieve any data packets that were dropped or missed in the first file delivery transmission by retrieving the corresponding data packets in the second file delivery transmission; and

the apparatus is configured to experience a data transfer rate that increases as further apparatuses are included in the group through sharing of bandwidth on a network on which the first file delivery transmission occurs allocated to the apparatus and the further apparatuses.

24. (Previously Presented) An apparatus according to claim 23, configured to receive said data packets via a first communication network and to transmit the request via a second communication network.

25. (Previously Presented) An apparatus according to claim 23, comprising a mobile telephone.